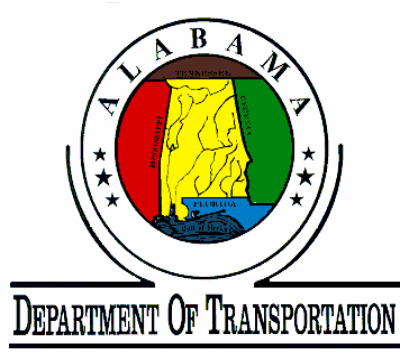
PARTIAL SUMMARY REPORT FOR ADDENDUM 4 SAMPLING RESULTS FOR NOVEMBER 15 AND 16, 2001

INVESTIGATION OF "LOW-LYING AREAS"

Coliseum Boulevard Plume Investigation



January 7, 2002

Submitted to:

The Alabama Department of Environmental Management
Montgomery, Alabama

TABLE OF CONTENTS

DEPARTMENT OF TRANSPORTATION

PARTIAL SUMMARY REPORT FOR ADDENDUM 04 SAMPLING RESULTS FOR NOVEMBER 15 AND 16, 2001

INVESTIGATION OF "LOW-LYING AREAS"

January 7, 2002

Background

On September 17, 2001, the ADEM (Alabama Department of Environmental Management) approved the work plan for investigation of the "low-lying" areas as defined in Addendum 04. **TTL** field personnel examined the low-lying areas identified in Addendum 04 on October 4, 5, 8, and 9, 2001. The purpose for examining the low-lying areas was to establish sampling locations for collecting soil and surface-water samples. The soil and surface-water samples were to be analyzed for VOCs (volatile organic compounds).

Intermittent and perennial streams were identified and their drainageways followed to determine the directions of flow of the streams and the interactions of the streams with water in the low-lying areas. The locations of the stream channels and adjacent low-lying areas were identified (see Figure 1). Additionally, low points in the dry streambeds and adjacent low-lying areas, a seep, and stream depositional areas were identified and recorded. The coordinates for the sampling locations were estimated using a Garmin GPS (Global Positioning Satellite) 12 unit. **TTL** personnel selected 16 potential sampling locations. The ADEM requested to review the selected sampling locations prior to collection of soil and surface-water samples by **TTL**. The 16 sites where samples would be collected and the scope of work were submitted to the ADEM on October 24, 2001. The ADEM verbally approved the locations for the sampling and scope of work on November 2, 2001.

Summary of Field Activities

On November 15 and 16, 2001, **TTL** personnel collected soil and surface water samples at the 16 sites. Sediment samples were the only samples collected at locations where surface water was not present.

Sample Locations

The locations of the 16 sites are shown on Figure 2 and described in Table 1.

TABLE 1. Soil and Surface Water Sample Locations;
Coliseum Boulevard Plume Site, Montgomery, Montgomery County, Alabama.

Sample Location Identifier	Description
A	Seep
B	Low point of a multi-branching channel. Water flows in, pools until it overflows into other channels.
C	Low point of an interconnecting channel between two intermittent streams.
D	Low point of cross- branching channels.
E	Low point of a channel (ground water at surface).
F	Same as B except only one channel flows out.
G	End of intermittent stream, discharges into Three Mile Branch.
H	Depositional area (sand bar)
I	Depositional area (sand bar)
J	Depositional area (mud flat)
K	Low point (water pools)
L	Depositional area (sand bar)
M	A low point in the field
N	Culvert (water outflow)
O	Low point at bottom of hill
P	Culvert (water inflow)

Sample Collection

In the approved scope of work, **TTL** had proposed to collect soil samples using a Wildco Hand Core Sampler, which would allow soil sampling in the areas inundated with surface-water. However, there was no surface-water at many of the sample sites on November 15 and 16, 2001. Additionally, **TTL** was unsuccessful in collecting an

adequate amount of sample using the Wildco Hand Core Sampler in the stream channels due to the large and small aggregate in the subsurface sediment. Therefore, a hand auger was used in place of using the Wildco Hand Core Sampler to collect the soil samples. Samples were collected from the hand auger using a 5-gram Encore sampler. All soil samples were collected immediately above the first stiff silt or clay layer or in layers with a high organic content within the top 20-inches of land surface.

Surface-water samples were collected at 9 of the 16 sites. The surface water samples were collected by slowly lowering the upright VOC glass vial into the water.

Soil and surface-water samples were immediately placed on ice, in a cooler, and shipped to **TTL's** laboratory for VOC analyses. The samples were analyzed for VOC's using Method 8260 as outlined in Test Methods for Evaluating Solid Waste Physical/Chemical Methods, EPA, SW-846, 3rd Edition, November 1986.

Duplicate samples were collected at 10 percent of the total number of sample sites. An equipment rinseate was collected each day and a trip blank was placed in each cooler.

The hand auger was decontaminated prior to collection of each soil sample. The hand auger was cleaned with tap water and soap using a brush as necessary to remove particulate matter and surface films. The hand auger was rinsed thoroughly with tap water; then rinsed thoroughly with deionized water; and then thoroughly rinsed with isopropyl alcohol. After rinsing with the isopropyl alcohol, the equipment was rinsed again with deionized water. The fluids generated during decontamination were collected in 5-gallon plastic buckets and later transported to the Central Staging area for treatment.

Evaluation of Data

TCE (trichloroethylene) was the only constituent detected in the surface-water samples. Toluene, TCE, and methylene chloride were detected in the soil samples. The analytical results for samples collected on November 15 and 16, 2001 are presented in the following table and in the attached Figure 2. (Note that the methylene chloride is believed to have been present in the laboratory and is not believed to be present in the collected samples.) Laboratory reports are included in Attachement A.

TABLE 2. Concentrations of TCE and toluene in samples of soil and surface water collected on November 15 and 16, 2001; "Low-lying areas"; Coliseum Boulevard Plume Site, Montgomery, Montgomery County, Alabama. [Distribution of TCE and toluene in soil and ground water on November 15 and 16, 2001, are shown on Figure 2]

Sample Location Identifier	Aqueous Lab Results (TCE) µg/l	Soil Lab Results (TCE/Toluene) µg/kg	Approximate Sample Depth
A	<1.0	<3.0/<3.0 [1]	6"
B	-[2]	<3.0/<3.0	5"
C	-	<3.0/<3.0	8"
D	-	<3.0/3.3	8"
E	-	<3.0/25.5	4"
F	-	<3.0/8.8	6"
G	-	<3.0/<3.0	10"
H	<1.0	<3.0/<3.0	6"
I	4.6	<3.0/<3.0	3"
J	2.8	<3.0/<3.0	8"
K	4.9	<3.0/<3.0	8"
L	2.9	3.9/<3.0	10"
M	<1.0	<3.0/<3.0	10"
N	7.0	50.6/16.4	3"
O	-	<3.0/3.3	3"
P	16.8	<3.0/<3.0	2"

1 Methylene Chloride was detected in eleven soil samples. Methylene Chloride is believed to have been present in the laboratory during analysis of the soil samples.
2 Aqueous sample not collected because surface-water was not present.

Recommendation

During the sampling events on November 15 and 16, 2001, surface-water was not present at 7 of the 16 sampling locations. The ALDOT recommends an additional sampling round be completed once the low-lying areas are inundated with surface water. **TTL** will collect soil and surface water samples in late winter or early spring when seasonal groundwater levels are high. If any sample location is not inundated with

surface-water then the location will be considered ephemeral (not long lasting) and will not be sampled. **TTL** will contact the ADEM prior to initiating a sampling event. The ALDOT requests an extension to prepare the final summary report to allow for the additional soil and ground water sampling. The ALDOT will submit the final report on or before March 30, 2002.

FIGURES

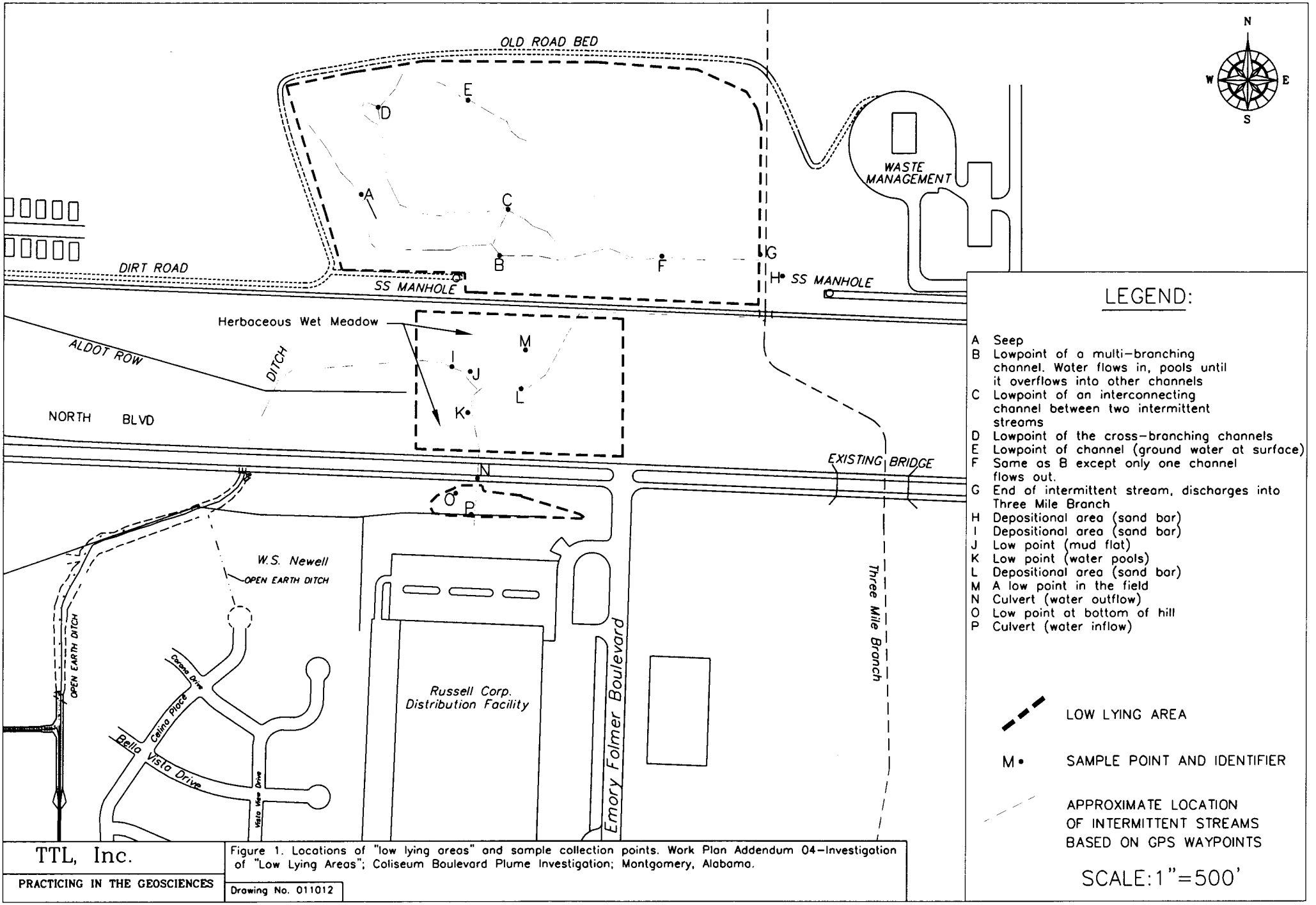


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Figure 1. Locations of "low lying areas" and sample collection points. Work Plan Addendum 04–Investigation of "Low Lying Areas"; Coliseum Boulevard Plume Investigation; Montgomery, Alabama.

Drawing No. 011012

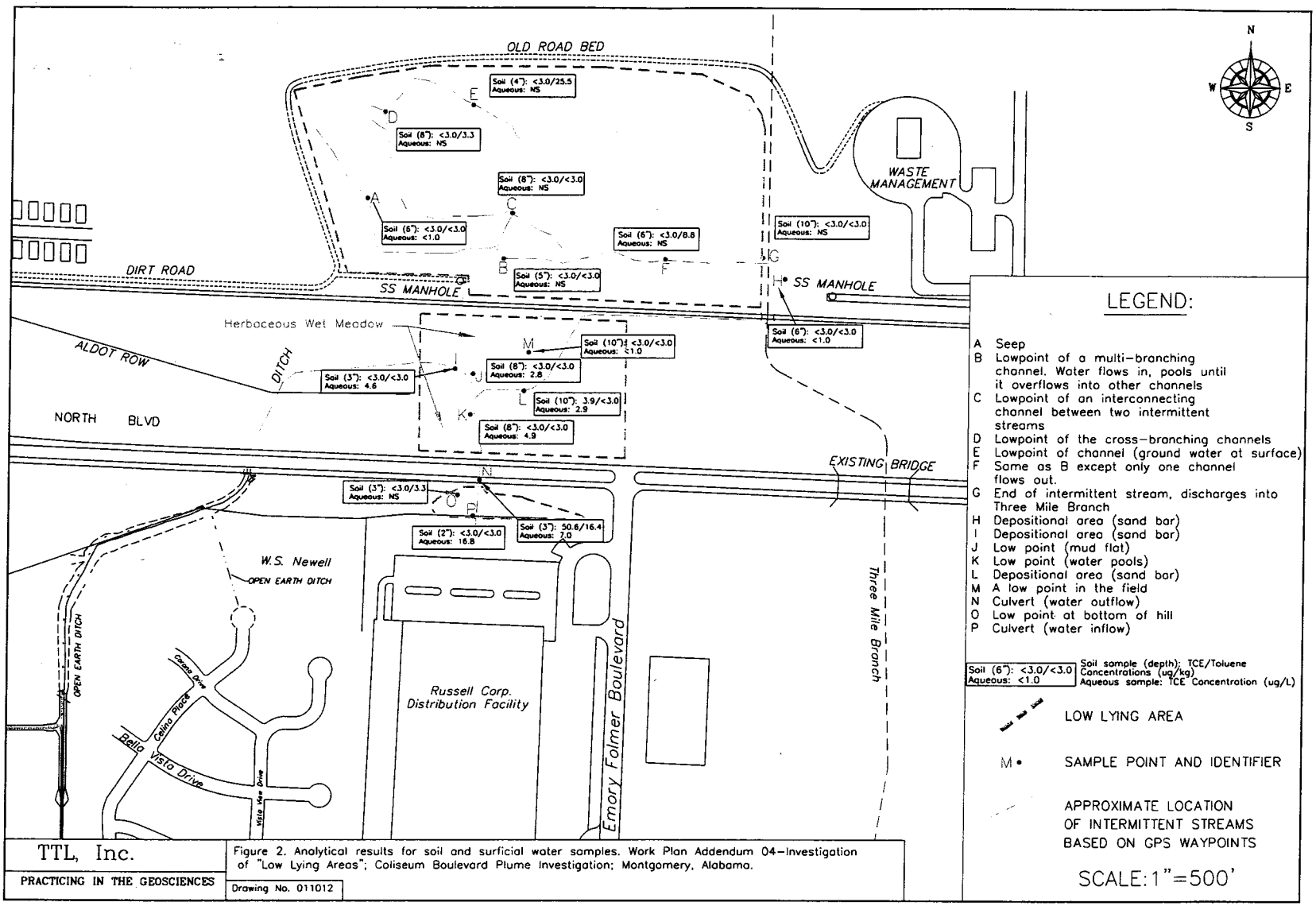

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Figure 2. Analytical results for soil and surficial water samples. Work Plan Addendum 04–Investigation of "Low Lying Areas"; Coliseum Boulevard Plume Investigation; Montgomery, Alabama.

Drawing No. 011012

ATTACHMENT
(Refer to GIS Database)